

NATURAL RESOURCES CONSERVATION SERVICE

TREE/SHRUB PRUNING DESIGN PROCEDURES

(660DP)

A. Pruning for the production of wood products.

1. Prune only on stands that have a site index of 55 or higher. Refer to Section II-Forestland Interpretations, Guide to Suitable Soils for Wood Crops, which lists site indexes by Soil Series and Vegetative Zone.
2. Branches shall be removed by pruning off the branch just outside the branch collar, not leaving a stub (Refer to Figures 1-3 for guidelines on both dead and live branches).
3. Remove no more than one-third of the live crown in any one-year.
4. Hardwoods (deciduous trees)
 - a. Generally, trees to favor in Nebraska include: Black walnut, Eastern cottonwood, Green ash, Hackberry, Bur oak, Northern red oak, Hickories, Silver maple, Black Cherry, Pecan and Basswood.
 - i. In a stand of small trees, select and thin to approximately 200 to 250 sapling-sized trees per acre spaced 12 to 15 feet apart to prune.
 - ii. In the second stage, with trees up to 10 inches diameter at breast height (diameter at breast height is the height at 4.5 feet, (dbh)), select and thin to approximately 100 trees per acre spaced about 20 feet apart to prune.
 - iii. In the third stage, with trees over 10 inches diameter at breast height (dbh), select and thin to approximately 75 trees per acre spaced about 24 feet apart to prune.
 - b. Begin corrective pruning for a straight central stem the second year after planting. For natural stands of black walnut and other hardwoods, prune before they reach 5 inches dbh.
 - c. All pruning shall be done with hand pruners, loppers, pruning saws, or power saws.
 - d. The preferred pruning time is during the late winter (January-February) before bud break.
 - e. Prune to develop a single straight stem. Continue pruning until a clear log is obtained - at least 9 feet long.
 - f. Badly deformed trees that are 12 inches or less in diameter should be cut off one-half inch above the ground and allowed to resprout. Trees must be cut during the dormant season. Thin the resulting stump sprouts to select the strongest, straightest stem.
5. Conifers (evergreens)
 - a. Give preference to pruning shade tolerant or intermediate species because their branches persist even in dense stands.
 - b. Prune only desired tree species. The number of trees to prune is the same as for hardwoods.
 - c. Begin pruning when the trees are 3 to 5 inches dbh.
 - d. All pruning shall be done with hand pruners, loppers, pruning saws, or power saws.

- e. The preferred pruning time is during the late winter (January-February) before bud break.
- f. Prune to develop at least a 17-foot long clear log for pine and a 9-foot long clear log for cedar.

B. Shearing (shearing or shaping) Christmas trees

Shearing is a necessary operation for adding quality to Christmas trees. It is a highly specialized procedure that varies with the desires of the grower. Generally Christmas trees are sheared to achieve a compact, symmetrical, and balanced crown while maintaining a natural appearance.

1. Begin shearing when the trees are about 3 feet tall and continue shearing each year until the tree is harvested.
2. If the tree is forked, prune to remove all but the best stem.
3. Maintain one leader by removing all but the best one.
4. Prune around the base to provide a handle of 5 to 8 inches.
 - a. Cut branches just outside the branch collar, not leaving stubs.
 - b. This pruning can be done anytime during the year.
 - c. Base pruning may be delayed until the time of harvest or done as a part of routine pruning.

5. Spruces and firs

Most of the short-needed and/or single needed evergreens have buds along their stems between whorls.

- a. Shearing will be done after the season's growth is complete prior to or before the end of July.
- b. Pruning clippers, hedge shears, and shearing knives may be used.
- c. Make cuts just above a bud. Cuts on the terminal should be made at a 45 degree angle.
- d. Cut the leader back to the length desired, usually 10 to 15 inches, and cut the side whorls proportionately.

6. Pines

Pines do not form buds along their stems between whorls, but if pruning is done at the right time, new terminal buds will form at the end of the shortened leader.

- a. Shear about the middle of the active growing period or when height growth is completed. Actual calendar date varies with species, but is usually the middle of June to the middle to July in Nebraska.
- b. Pruning clippers, hedge shears and shearing knives may be used.
- c. Cut the terminal at a 45 degree angle. Cut it back to the length desired, usually 10 to 15 inches. The top whorl should be cut back to about one-third the terminal length and cut the other side whorls proportionately.

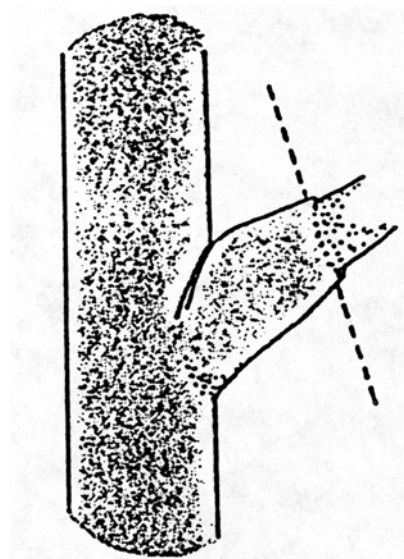
C. Pruning to enhance the beauty of an area

1. Pruning may be needed to improve aesthetics or recreational value of an area for:
 - a. Safety
 - b. Opening of picnic areas, trails, and other public use areas.
 - c. Creating vistas in scenic areas

2. Pruning should be done during the dormant season of late winter.
3. Pruning saws, power saws, loppers and hand pruners may be used.
4. Try not to cut branches larger in diameter than one half the diameter of the trunk. Do not remove more than one-third of the tree's live crown in any one year.
5. Cutting branches back to where they fork with another branch may shorten tree height or width.
6. Cuts shall be just outside the branch collar.
7. Large branches should be undercut first to prevent peeling or stripping of the bark from the weight of the falling branch (see diagram).

Pruning a Dead Branch. A dead branch stub that has a collar of live wood should be cut just at the outer edge of the collar (swollen area where one branch meets another).

Figure 1



Pruning a Live Branch

Remove a large limb by making three cuts:

1. Undercut 12" to 24" from the branch collar (A) (Cut 1-Figure 2).
2. Make a top cut all the way through the branch, within 1" of the undercut (Cut 2-Figure 2).
3. The final cut should be just beyond the branch collar (A) (Cut 3-Figure 3).

Figure 2

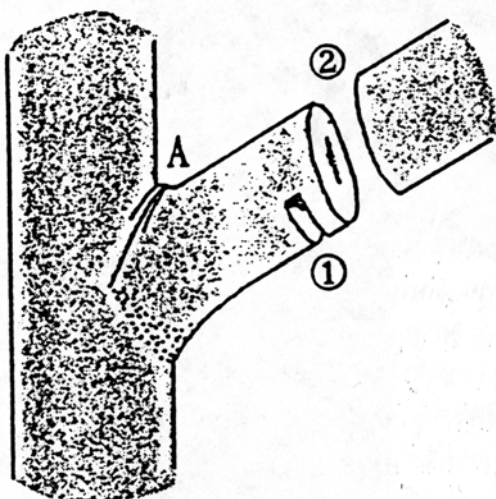


Figure 3

